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BRIEFER ARTICLES

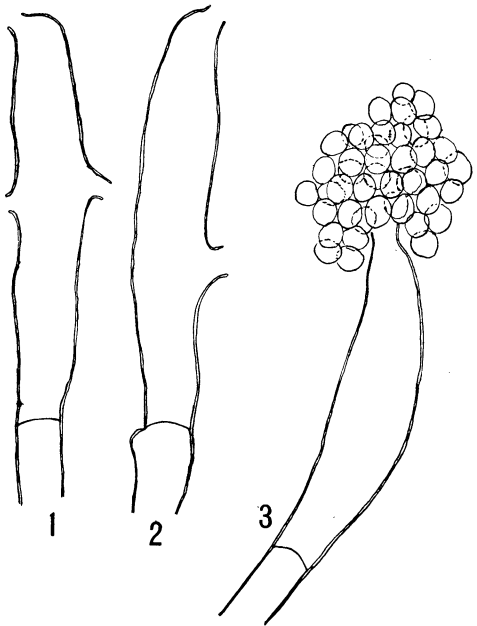
ANOTHER NEW ACHLYA

(WITH EIGHT FIGURES)

In the fall of 1909 a species of *Achlya* that was found to be new appeared in cultures from pools around Chapel Hill, N.C. It was separated from other forms and has now been kept under observation in pure cultures for nearly a year. It adds one more to the *Racemosa* group proposed by me in 1908.¹ The species may be described as follows:

***Achlya caroliniana*, sp. nov.**—Hyphae rather stout, about $48\ \mu$ at the base and $20\ \mu$ near the tip, in strong cultures reaching a length of 1.5 cm. Zoosporangia irregularly cylindric, about $20\text{--}30\ \mu$ in diameter, often discharging by several openings. Oogonia abundant, spherical, smooth, and unpitted; terminating short, slender branches, which are racemously borne on the strong main hyphae. Oogonial branches generally simple, but often giving off one or two branches near the base which also terminate in oogonia, and, as a rule, are curved downward. Oospores generally 1 or 2, often 3, and very rarely 4 or 6 (8 were seen twice). They are centric, with a diameter varying from 18.5 to $26\ \mu$, averaging about $22\ \mu$. Antheridia absent, but hypogynous antheridial tubes often appear through the basal partition exactly as in *Achlya hypogyna* Coker.

Typical zoosporangia are shown in figs. 1-3. In cultures that have become somewhat foul, the spores may be fully formed, but not discharged. In several such cases the spores

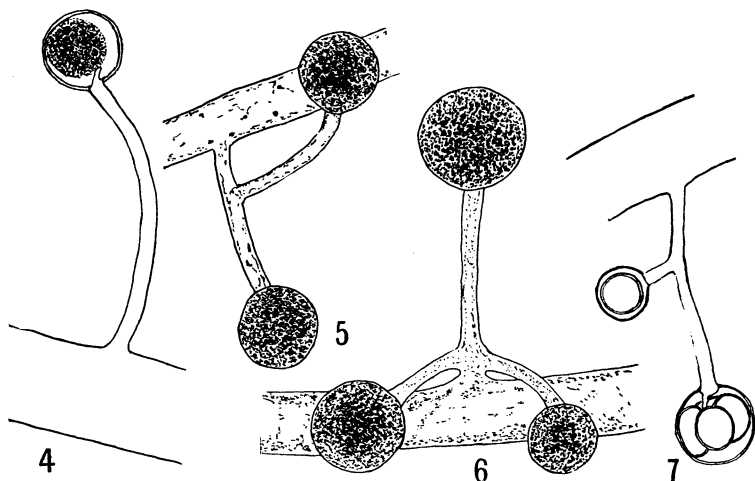


FIGS. 1-3.—Sporangia of various forms; all $\times 335$.

¹ A new species of *Achlya*. BOT. GAZETTE 45:194, 195. 1908.

were seen sprouting and sending their tubes through the sporangium wall, as is normally the case in *Alpanes*.

Figs. 4-7 represent the normal arrangement of the oogonia; the hypogynal tube will be noticed in fig. 4. In countings from my cultures,



FIGS. 4-7.—Fig. 4, simple oogonial branch terminating in an oogonium; fig. 5, oogonial filament with one branch; fig. 6, same with two branches; fig. 7, a branched oogonial filament with terminal oogonium containing four oospores; all $\times 335$.

this tube was present only in about one-sixth of the oogonia, but it appears in all cultures and is one of the most distinctive characters of the species. The appearance of an antheridial tube, not from an antheridium, but from the vegetative coenocyte, is a most singular occurrence, and would seem to be a degenerate condition induced by the suppression of fertilization. I could find no evidence of fertilization even in cases where a tube was found. In not a single case was an antheridium seen below the oogonium.



FIG. 8.—Exceptional oogonium with two projections on surface; $\times 335$.

The arrangement shown in fig. 6, suggesting the three balls of a pawnbroker's shop, occurs so often and is so striking as to be one of the best diagnostic characters of the species. The lower branches are typically recurved (figs. 5, 6), but not always (fig. 7).

Out of many thousands of oogonia seen, a very few had one or two short rounded outgrowths from

the surface (fig. 8) like those that are characteristic of *A. hypogyna*. In only two cases were intercalary oogonia seen.

In old cultures the protoplasm becomes condensed and segregated into certain restricted areas of the hyphae to form resting fragments, which, though not of definite shape, may be regarded as chlamydospores.

In the *Racemosa* group, as mentioned above, there may now be included *A. racemosa*, *A. racemosa* var. *stelligera*, *A. hypogyna*, and *A. caroliniana*. The group may be defined as follows:

Oogonia terminating short branches, racemously arranged. Oospores few, generally one or two. Antheridia absent, or of suboogonial origin.—W. C. COKER, *Chapel Hill, N.C.*

SOME NEW SAPROPHYTIC FUNGI OF THE MIDDLE ROCKY MOUNTAIN REGION

Until a year ago (June 1909) the saprophytic fungi of the Rocky Mountain region included within Wyoming had remained practically untouched. It was with great interest, therefore, that the writer began the task of making a collection of these fungi under the kindly suggestion and help of Professor AVEN NELSON. The particular region studied includes the whole of the Medicine Bow National Forest, together with the vast extent of the Laramie Plains. The timber in the forest is chiefly lodgepole pine, Englemann spruce, Douglas fir, and balsam, with dense growths of aspen on the boundaries. In many places the timber is very dense, in consequence of which the humus formed of the needles is very thick; the soil in the open timber also is very rich. The whole region is well watered by the melting snows and by the numerous mountain streams and creeks, resulting in very favorable conditions for the growth of the fleshy fungi. The great difference in the altitude, which ranges from 2130 to 3900 meters, further aids in the formation of many varying conditions, thus giving not only richness in specimens but a wealth of species as well.

In the very precursory examination of the region, the writer was astonished at the great quantity and variety of forms. The further collections, which it is expected will be made, will no doubt extend the list greatly. This list, as finally worked out, will be published as a whole, but for the present the following apparently new species only are presented.

Catathelasma, gen. nov.—Pileus somewhat fleshy, convex, then expanded: lamellae very decurrent, somewhat unequal, with acute edges: